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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/699,820      | 10/30/2000  | Ying-wei Lin         | XER 2 0329 D/A0125  | 7170             |

7590 07/01/2004

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| EXAMINER |
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BURLESON, MICHAEL L

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| ART UNIT | PAPER NUMBER |
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2626

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DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/699,820

Applicant(s)

LIN ET AL.

Examiner

Michael Burleson

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,7-9,11,14-17 and 19 is/are rejected.
- 7) ☒ Claim(s) 3-6,12,13,18 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2-4.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) was submitted on October 30, 2000. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Specification***

2. The abstract of the disclosure is objected to because: page 4, lines 23-27, the sentence starting with "FIGURE 8" and "FIGURE 9", should be a separate paragraphs. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

3. Claims 1 and 20 are objected to because of the following informalities:
  4. Regarding claim 1, "a multi-colorant color space, in a single -colorant space", should read, -- a multi-colorant color space, to a single-colorant space --.
  5. Regarding claim 20, " claim 20", should read, -- claim 19 --.
- Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 7-9, 14-17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrington US 5153576.
2. Regarding claim 1, Harrington teaches of a method of mapping of color images to black-and-white images (column 5, lines 6-8), which reads on a method for rendering an image described in a multi-colorant color space, in a single-colorant color space. Harrington also teaches of a textured hue-lightness-saturation color model. As one moves around the saturated, there is a continuous variation of patterns (column 4, lines 35-40 and figure 3), which reads on generating a continuously variable screening tool operative to provide a texture corresponding to each hue and saturation in the multi-colorant color space. He also teaches of applying each color component with it's own halftone screen, which yields a black-and-white textured image (column 4, lines 60-63 and column 5, lines 1-2). This reads on transforming the multi-colorant description of the image based on the continuously variable screening tool thereby creating a single-colorant description of the image.
3. Regarding claim 7, Harrington teaches of mapping color images to black and white (column 4, lines 48-51 and figure 5). Harrington also teaches of a black-and-white printer (100) (column 4, lines 55-56), it is inherent that the black-and-white printer (100) contains the step of marking media as directed by the single-colorant description of the

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image or else the black-and-white printer (100) would not be able to print a black and white image.

4. Regarding claim 8, Harrington teaches that the digital halftone cell areas are allocated according to the luminance contribution of each component (column 3, lines 38-42). He teaches that if the pixel value is greater than the threshold, then white is printed (column 3, lines 50-55). This reads on the step of marking a media further comprises comparing a luminance of a pixel from the image with an associated screen value and placing a mark on the media if the luminance value is above the screen value.

5. Regarding claim 9, Harrington teaches that the digital halftone cell areas are allocated according to the luminance contribution of each component (column 3, lines 38-42). He teaches that if the pixel value is lower than the threshold, then black is printed (column 3, lines 50-55). This reads on the step of marking a media further comprises comparing a luminance of a pixel from the image with an associated screen value and placing a mark on the media if the luminance value is below the screen value.

6. Regarding claim 14, Harrington teaches of a black-and-white printer (100), which is used to map color images to black and white images (column 4, lines 55-67 and column 5, lines 6-8), which reads on an image processor operative to render a single colorant version of a multicolor image. He also teaches of an applying means (114) which applies the color components to it's own halftone screen to yield a black and white textured image (column 4, lines 61-67 and column 5, lines 1-5), which reads on a

continuously variable screening tool generator operative to generate a different screen texture for every hue and saturation in the multicolor image.

7. Regarding claim 15, Harrington teaches of a black and white printer (100) (figure 6), which reads on a reprographic image processor.

8. Regarding claim 16, Harrington teaches of a computer (110) (column 4, lines 55-57), which reads on the image processor is a general-purpose computing device.

9. Regarding claim 17, Harrington teaches of colored images produced by business or presentation graphics (column 1, lines 39-43), which reads on a business graphic authoring device.

10. Regarding claim 19, Harrington teaches of a black-and-white printer (100), which is used to map color images to black and white images (column 4, lines 55-67 and column 5, lines 6-8), which reads on an image processor operative to render a single colorant version of a multicolor image. He also teaches of an applying means (114) which applies the color components to it's own halftone screen to yield a black and white textured image (column 4, lines 61-67 and column 5, lines 1-5), which reads on a continuously variable screening tool generator operative to generate a different screen texture for every hue and saturation in the multicolor image. Harrington also teaches of an applying means (114) for applying each of the plurality of color components to its own halftone screen (column 4, lines 60-65), which reads on an image transformer operative to apply the different generated screen textures in transforming the multicolor image to generate a single colorant version of the image. Harrington teaches of a black-and-white printer (100) that includes a computer (110) (column 4, lines 55-56), it

is inherent that the computer (110) contains a print engine and a marker operative to use the single colorant version of the images as a basis for controlling the print engine to render the single colorant version of an image or else the black-and-white printer (100) would not be able to print a black and white image.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington US 5153576 in view of Janssens et al. US 4458002.

13. Regarding claim 2, Harrington teaches of a method of mapping of color images to black-and-white images (column 5, lines 6-8), which reads on a method for rendering an image described in a multi-colorant color space, in a single-colorant color space. Harrington also teaches of a textured hue-lightness-saturation color model. As one moves around the saturated, there is a continuous variation of patterns (column 4, lines 35-40 and figure 3), which reads on generating a continuously variable screening tool operative to provide a texture corresponding to each hue and saturation in the multi-colorant color space. He also teaches of applying each color component with it's own halftone screen, which yields a black-and-white textured image (column 4, lines 60-63 and column 5, lines 1-2). This reads on transforming the multi-colorant description of

the image based on the continuously variable screening tool thereby creating a single-colorant description of the image. Harrington teaches of a textured hue-lightness-saturation color model. As one moves around, there is a continuous variation of patterns (column 4, lines 35-40 and figure 3). These patterns are halftone patterns which are applied to the plurality of color components (column 4, lines 61-64), which reads on defining a plurality of primary screens associated with a plurality of hues from the multi-colorant color space.

14. Harrington fails to teach of defining a neutral screen associated with neutral color.

15. Janssens et al. teaches of a neutral grey dot screen (column 2, lines 59-60), which reads on defining a neutral screen associated with neutral color.

16. Harrington could be modified with the neutral grey dot screen of Liang. This modification would have been obvious to one of ordinary skill in the art at the time of the invention in order to process screens that are not covered by the primary screens.

17. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington US 5153576 in view of Janssens et al. US 4458002 as applied to claim 2 above, and further in view of Samworth US 6445465.

18. Regarding claim 11, Harrington teaches of a method of mapping of color images to black-and-white images (column 5, lines 6-8), which reads on a method for rendering an image described in a multi-colorant color space, in a single-colorant color space. Harrington also teaches of a textured hue-lightness-saturation color model. As one



moves around the saturated, there is a continuous variation of patterns (column 4, lines 35-40 and figure 3), which reads on generating a continuously variable screening tool operative to provide a texture corresponding to each hue and saturation in the multi-colorant color space. He also teaches of applying each color component with it's own halftone screen, which yields a black-and-white textured image (column 4, lines 60-63 and column 5, lines 1-2). This reads on transforming the multi-colorant description of the image based on the continuously variable screening tool thereby creating a single-colorant description of the image. Harrington teaches of a textured hue-lightness-saturation color model. As one moves around, there is a continuous variation of patterns (column 4, lines 35-40 and figure 3). These patterns are halftone patterns which are applied to the plurality of color components (column 4, lines 61-64), which reads on defining a plurality of primary screens associated with a plurality of hues from the multi-colorant color space.

19. Janssens et al. teaches of a neutral grey dot screen (column 2, lines 59-60), which reads on defining a neutral screen associated with neutral color.

20. Harrington in view of Janssens et al. fails to teach of the step of generating a high frequency dot screen.

21. Samworth teaches of an AM screening gray value threshold detector (33), where dot area modulation is conducted (column 3, lines 54-65), which reads on a step of generating a high frequency dot screen.

22. Harrington in view of Janssens et al. could be modified with the step of generating a high frequency dot screen of Samworth. This modification would have

been obvious to one of ordinary skill in the art at the time of the invention in order to prevent abrupt transitions in the black and white image due to the presence of noise.

***Allowable Subject Matter***

23. Claims 3-6, 12,13,15,18 and 20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

1. Any inquiry concerning this communication should be directed to Michael Burleson whose telephone number is (703) 305-8683 and fax number is (703) 746-3006. The examiner can normally be reached Monday thru Friday from 8:00 a.m. – 4:30p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached at (703) 305-4863

Michael Burleson  
Patent Examiner  
Art Unit 2626

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June 22, 2004

*Arh Wm h Nguyen*

**MADELINE NGUYEN  
PATENT EXAMINER**

*J*